

REMARKS

Applicants appreciate the Examiner's thorough consideration provided the present application. Claims 48-65 and 68-71 are now present in the application. Claims 55 and 69 have been amended. Claim 48 is independent. Reconsideration of this application, as amended, is respectfully requested.

Claim Rejections Under 35 U.S.C. §112

Claim 55 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. This rejection is respectfully traversed.

In view of the foregoing amendments, it is respectfully submitted that this rejection has been addressed. Reconsideration and withdrawal of the rejection under 35 U.S.C. § 112 are respectfully requested.

Claim Rejections Under 35 U.S.C. §§ 102 & 103

Claims 48-55, 59, 60, 62-65, 68, 70 and 71 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Masaaki JP 61-046290. Claims 56-58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Masaaki in view of Spero, U.S. Patent No. 3,911,318. Claim 61 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Masaaki in view of Son, U.S. Patent No. 4,073,770. Claim 69 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Masaaki in view of Ressler, U.S. Patent No. 5,626,768. These rejections are respectfully traversed.

Independent claim 48 recites a combination of elements including “[a] fluid treatment apparatus comprising: an ultraviolet light source including an ultraviolet lamp; a microwave energy source for exciting said ultraviolet lamp; and a waveguide for guiding microwave energy originating from said microwave energy source to the ultraviolet lamp, said waveguide being UV transparent and wholly surrounding the ultraviolet lamp, wherein the waveguide is provided with a blocking end flange; and a housing for said ultraviolet light source, said housing having an inlet and an outlet, the housing shaped to guide flow of a fluid to be treated from the inlet, past the waveguide to the outlet.” Applicants respectfully submit that the above combination of elements as set forth in independent claim 48 is not disclosed nor suggested by the references relied on by the Examiner.

The Examiner alleged that the combination of Masaaki’s rod-shaped antenna 13 and inner tube 16 is the UV lamp as recited in claim 48. Applicants respectfully disagree. In fact, the UV lamp is defined by the inner tube 13, the outer tube 17 and the gas discharge chamber 18. In particular, Masaaki in the English abstract states “[a]n inner tube 16 made of quartz glass and an outer tube 17 made of synthetic quartz glass are arranged..., a gas-discharge chamber 18 is formed by both tubes...” Therefore, the gas-discharge chamber 18 comprises gas, which on excitation emits UV radiation. Both the inner tube 16 and the outer tube 17 act to contain the gas.

The Examiner also alleged that the outer tube 17 is the waveguide as recited in claim 48. As mentioned, the outer tube 17 is part of the UV lamp, not a waveguide. In fact, it is only the waveguide 22, the coaxial cable 24 and the rod-shaped antenna 13 that have any wave-guiding function in the apparatus of Masaaki. In particular, Masaaki in the English Abstract states “[a] microwave is sent to the rod-shaped antenna 13 from a microwave generator 21 through a

waveguide 22 and a coaxial cable 24..." In addition, as shown in FIG. 1 of Masaaki, it is clear that the coaxial cable 24 is directly connected to the antenna 13, not connected to the outer tube 17 at all.

Therefore, in Masaaki, the microwave radiation is directed (via the waveguide 22 and coaxial cable 24) to the rod-shaped antenna 13 to excite the UV lamp (defined by tubes 16, 17 and gas-discharge chamber 18). The emitted UV radiation is then transmitted to the fluid in the hermetic vessel 1.

FIG. 1 of Masaaki clearly indicates that the waveguide (*i.e.*, the rod-shaped antenna 13) is surrounded by the lamp (*i.e.*, the tubes 16, 17 and the gas-discharge chamber 18.) This is entirely opposite to the requirement of the claimed invention that the waveguide wholly surrounds the UV lamp. Therefore, Masaaki fails to teach "said waveguide... wholly surrounding the ultraviolet lamp" as recited in claim 48.

It is further submitted that nothing in Masaaki would guide or direct the skilled person to consider wholly surrounding the ultraviolet lamp by a waveguide. Indeed, a completely reverse guidance is given to surround the waveguide by the UV lamp so as to only direct one skilled in the art away from the claimed invention.

With regard to the Examiner's reliance on the other secondary references, those references have only been relied on for their teachings related to some dependent claims. Those references also fail to disclose the above combination of elements as set forth in independent claim 48. Accordingly, those references fail to cure the deficiencies of Masaaki.

Accordingly, none of the references utilized by the Examiner individually or in combination teach or suggest the limitations of independent claim 48 or its dependent claims.

Therefore, Applicants respectfully submit that independent claim 48 and its dependent claims clearly define over the teachings of the references relied on by the Examiner.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §§ 102 and 103 are respectfully requested.

CONCLUSION

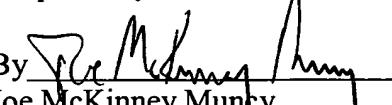
It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

In the event there are any matters remaining in this application, the Examiner is invited to contact Joe McKinney Muncy, Registration No. 32,334 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: AUGUST 8, 2006

Respectfully submitted,

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